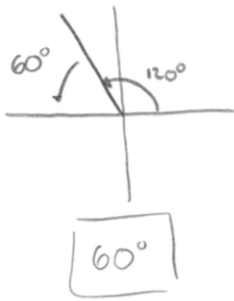
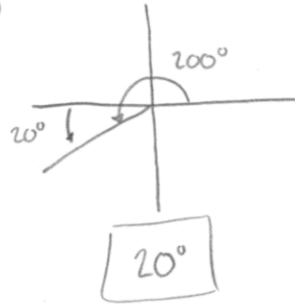


5-53 000

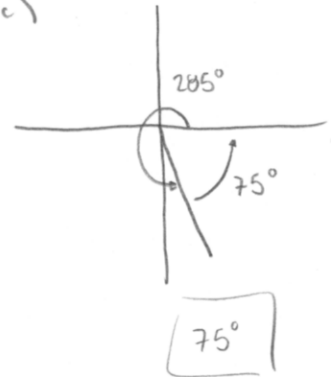
5. (a)



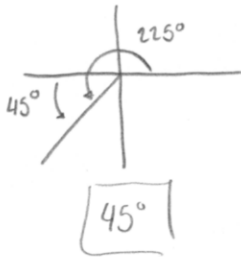
(b)



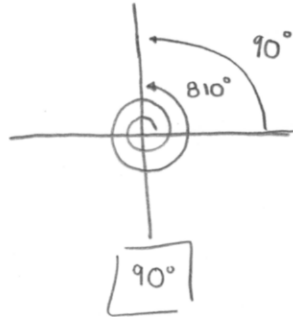
(c)



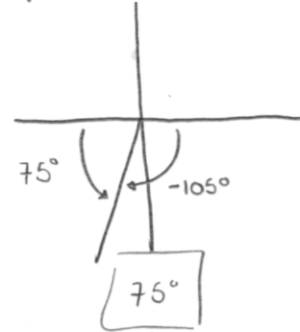
7. (a)



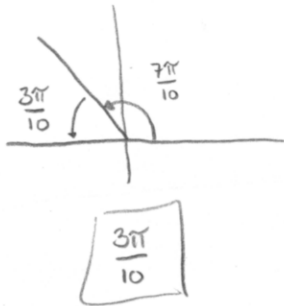
(b)



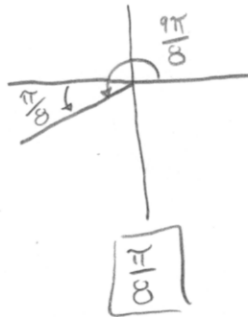
(c)



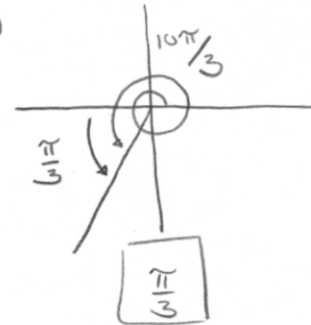
9. (a)



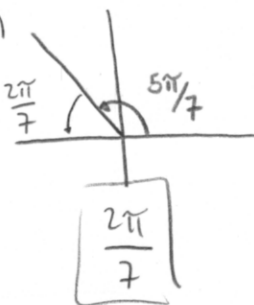
(b)



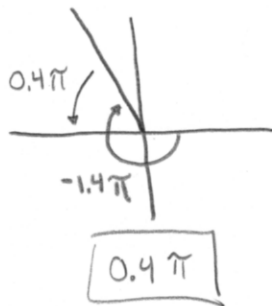
(c)



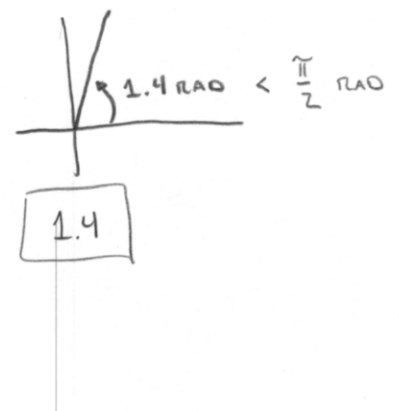
11. (a)



(b)



(c)



$$\underline{13.} \quad \cos 150^\circ = -\cos 30^\circ = \boxed{-\frac{\sqrt{3}}{2}}$$

\uparrow
 REF. ANGLE

150° IS IN QUADRANT II

S	A	WHERE $\cos < 0$.
T	C	

$$\underline{15.} \quad \tan 330^\circ = -\tan 30^\circ = \boxed{-\frac{1}{\sqrt{3}}}$$

$$\underline{17.} \quad \cot(-120^\circ) = \tan(-120^\circ)^{-1} = \tan(60^\circ)^{-1} = \boxed{\frac{1}{\sqrt{3}}}$$

$$\underline{19.} \quad \csc(-630^\circ) = \sin(-630^\circ)^{-1} = \sin(90^\circ)^{-1} = 1$$

$$\underline{21.} \quad \cos(570^\circ) = -\cos(30^\circ) = \boxed{-\frac{\sqrt{3}}{2}}$$

$$\underline{23.} \quad \tan 750^\circ = \tan 30^\circ = \boxed{\frac{1}{\sqrt{3}}}$$

$$\underline{25.} \quad \sin \frac{3\pi}{2} = -\sin \frac{\pi}{2} = \boxed{-1}$$

$$\underline{27.} \quad \tan\left(-\frac{4\pi}{3}\right) = -\tan \frac{\pi}{3} = \boxed{-\sqrt{3}}$$

$$\underline{29.} \quad \csc\left(-\frac{5\pi}{6}\right) = -\sin\left(\frac{\pi}{6}\right)^{-1} = \boxed{-2}$$

$$\underline{31.} \quad \sec \frac{17\pi}{3} = \cos \left(\frac{\pi}{3} \right)^{-1} = \boxed{2}$$

$$\underline{33.} \quad \cot \left(-\frac{\pi}{4} \right) = -\tan \left(\frac{\pi}{4} \right)^{-1} = \boxed{-1}$$

$$\underline{35.} \quad \tan \left(\frac{5\pi}{2} \right) = \tan \frac{\pi}{2} = \boxed{\text{UNDEFINED}}$$

$$\underline{37.} \quad \sin \theta < 0 \Rightarrow \text{Q } \textcircled{\text{III}} \text{ or } \textcircled{\text{IV}} \quad (\text{y-coord NEGATIVE})$$

$$\cos \theta < 0 \Rightarrow \text{Q } \textcircled{\text{II}} \text{ or } \textcircled{\text{III}} \quad (\text{x-coord NEGATIVE})$$

$$\boxed{\text{Q III}}$$

$$\underline{39.} \quad \sec \theta > 0 \Rightarrow \cos \theta > 0 \Rightarrow x > 0 \Rightarrow \text{Q I or } \textcircled{\text{IV}}$$

$$\tan \theta < 0 \Rightarrow x \ \& \ y \ \text{HAVE OPP. SIGNS} \Rightarrow \text{Q II or } \textcircled{\text{IV}}$$

$$\boxed{\text{Q IV}}$$

$$\underline{41.} \quad \tan \theta = \frac{\sin \theta}{\cos \theta} = \frac{\pm \sqrt{1 - \cos^2 \theta}}{\cos \theta}$$

$$= \boxed{\frac{-\sqrt{1 - \cos^2 \theta}}{\cos \theta}}$$

← WE TAKE NEG SQUARE ROOT
SINCE θ IS IN Q III
WHERE SIN (y-coord.)
IS NEGATIVE.

43. $\cos \theta = \pm \sqrt{1 - \sin^2 \theta}$, \sin IS NEG IN Q IV

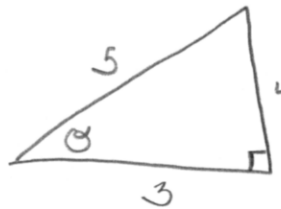
$$= -\sqrt{1 - \sin^2 \theta}$$

45. $\sec \theta = \pm \sqrt{\tan^2 \theta + 1}$, \sec IS NEG. IN Q II

(BECAUSE \cos IS NEG IN Q II)

$$= -\sqrt{\tan^2 \theta + 1}$$

47. $\sin \theta = -\frac{4}{5} \rightarrow \sin \theta = \frac{4}{5}$

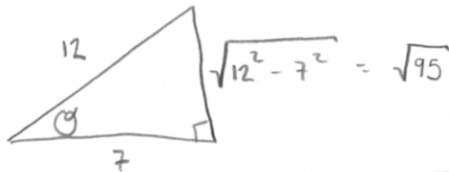


AND JUST REMEMBER θ IS IN Q IV

$\cos \theta = \frac{3}{5}$	$\sec \theta = \frac{5}{3}$
$\tan \theta = -\frac{4}{3}$	$\cot \theta = -\frac{3}{4}$
	$\csc \theta = -\frac{5}{4}$

S	A
T	C

49. $\cos \theta = \frac{7}{12}$



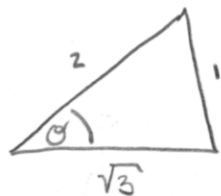
θ IN Q IV

BECAUSE $\cos > 0$ & $\sin < 0$

$\sin \theta = -\frac{\sqrt{95}}{12}$	$\csc \theta = -\frac{12}{\sqrt{95}}$	
$\tan \theta = -\frac{\sqrt{95}}{7}$	$\cot \theta = -\frac{7}{\sqrt{95}}$	$\sec \theta = \frac{12}{7}$

51.

$\csc \theta = 2$	$\sin \theta = \frac{1}{2}$
$\sec \theta = \frac{2}{\sqrt{3}}$	$\cos \theta = \frac{\sqrt{3}}{2}$
$\cot \theta = \sqrt{3}$	$\tan \theta = \frac{1}{\sqrt{3}}$



$\theta \in Q I$

(... so $\theta = \frac{\pi}{6}$)

53.

$\cos \theta = -\frac{2}{7}$

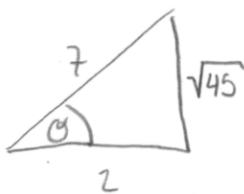


$\cos \theta = \frac{2}{7}$

$\theta \in Q II$

BECAUSE $\cos < 0$ (i.e. $x < 0$)

& $\tan < 0$ (i.e. x, y HAVE OPPOSITE SIGNS)



	$\sec \theta = -\frac{7}{2}$
$\sin \theta = \frac{\sqrt{45}}{7}$	$\csc \theta = \frac{7}{\sqrt{45}}$
$\tan \theta = -\frac{\sqrt{45}}{2}$	$\cot \theta = -\frac{2}{\sqrt{45}}$